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ABSTRACT

Roger Schank's ideas regarding the abandonment of classrooms as the central learning environment and changing the delivery of education are examined. Schank believes today's learning cycles should be divided equally between working at a computer, talking with others, and making something--none of which requires a formal classroom. Emphasis is placed on doing something as the best way for learning to occur, and computer simulations that engage students to take action, wrestle with failure, and develop emotional connections with the experience are the best solution for this task. Further, Schank believes that virtual universities via the Internet will eventually be in direct competition to the existing secondary and university system. (GR)

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R. Fielding

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The Death of the Classroom, Learning Cycles and Roger Schank

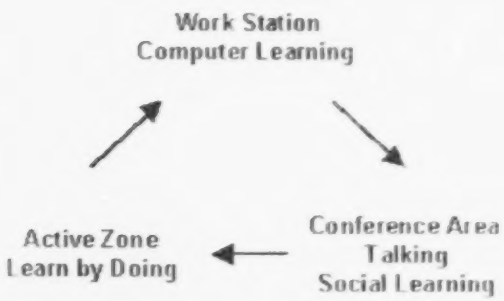
by Randall Fielding

"Classrooms are out! No more classrooms! Don't build them!"
Roger Schank, Institute for Learning Sciences

Do these sound like the words of a radical outsider? Schank is no outsider to the educational establishment. He is the director of Northwestern University's Institute for Learning Sciences. He holds three faculty appointments at Northwestern, as John Evans Professor of Computer Science, Education, and Psychology. Previously, he was professor of computer science and psychology at Yale, a visiting professor at the University of Paris and a faculty member at Stanford.

According to Roger, the only way we learn is through "doing," and failure. Failure gets our attention, it fosters an emotional response, which is essential for learning. "Doing," and emotional experiences rarely take place in a classroom.

"We should spend about 1/3 of our day at the computer, 1/3 talking with others, and 1/3 making something."



What are the environmental implications if learners are spending 1/3 of their day at the computer, 1/3 talking with others and 1/3 making something?

Computer-based learning is best suited to an individual work station, not a classroom. Talking or social learning lends itself to small, coffee shop-like spaces, where learners can gather informally. Learning by "doing" can happen in a wide variety of environments, including gardens, science labs, technical shops and dance studios.

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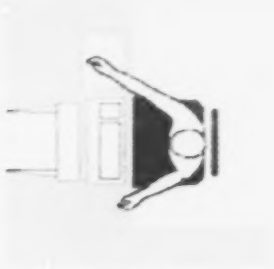
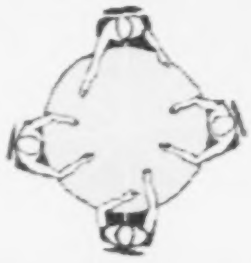
Environments for computer-learning, social leaning and active, learning by "doing," need not be located on school grounds. Museums, hospitals, businesses, parks and private homes are all environments which can support learning. The table below includes a list of non-classroom environments which can facilitate a balanced cycle of learning activities:



Computer Learning Work Station

- Library carrel
- 4-10 student work station*
- Private work station
- Hall niche with laptop
- Garden bench with laptop
- Home
- Work station at employer office



Talking, Social Learning Conference Area

- Small conference rm.
- Large meeting room
- Media resource area
- Hallway (standing)
- Cafeteria or snack area
- Garden steps, bench
- Entry hall
- Parking lot
- Home

Learning by Doing Active Zone

- Tech or science lab
- Shop
- Garden
- Dance studio
- Playing field
- Hospital
- Retail store
- Professional Office
- Museum
- Zoo

Roger Schank's ideas regarding learning activities and cycles were tested and refined while developing training programs for private industry. Anderson Consulting, an international leader in business consulting, spends over $200 million each year on training it s project managers. While Schank was teaching at Yale University, Anderson offered him 30 million dollars to develop a program to "fix computer learning." According to Schank, this did not interest him, instead, he told Anderson he wanted to "fix education." Anderson brought Schank to Chicago to help found Northwestern University's Institute for Learning Sciences. ILS found that what was wrong with corporate training programs was that they were modeled after school and university learning models.The ILS steered Anderson away from the traditional classroom model and towards a "virtual learning" model.

* A good example of this can be see at the High School of Environmental Studies (Zoo School), In Apple Valley, MN, or the design for the Sharm El Sheikh School, Egypt, both planned by Bruce Jilk. These plans utilize 10-12 student work groups arranged around a flexible, technology-rich resource area. For details: Sharm El Sheikh

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"Training should open with a bang. In virtual learning, training starts by having people do something. Even if they don't understand exactly what they they're doing, it's ok as long as they understand they can ask for help as they go along."

Schank and the ILS advocate just-in-time learning and interactive, CD-ROM game-like simulations. The multi-media simulations engage students to take action, wrestle with failure and develop emotional connections with the experience. Unlike scheduled courses, CD-ROM technology can be employed whenever the student is motivated to learn the material. The ILS method involves Goal Based Scenarios (GBS). GBS characteristics include:

- Goals are clear and agreed upon
- No telling or lecturing
- Teaching occurs only after learners fail
- Discussion
- Access to experts
- Simulation

"People need to fail in order to learn. Nothing anyone says (no matter how eloquent the speaker or insightful the words) will do any more than inspire you. You must internalize procedures to do a better job. To do this you must try them out and receive help when you fail"

Computer simulations versus live simulations:

Advantages of computer learning solutions:

- It's cheaper over time.
- It allows for failure without embarrassment.
- Do it once and it can be used many times.
- The same things happen each time.
- World class experts can be the teachers if they have been videotaped.

Live simulations have their advantages as well:

- They are cheaper initially
- They seem more realistic
- Different things happen each time.
- World class experts can be the teachers if they are there.

"It doesn't make sense to learn something unless you use it immediately ... The way learning should be done is just-in-time. The mind can only hold so much information for so long - when there is a lot of data, it should be conveyed just before its needed."

How will educational delivery change? According to Schank, virtual universities will offer services via the Internet in competition to the existing secondary and university system. Introductory physics for high school and college will be put together by the world's leading scientists and multi-media developers. Many offerings will provide a greater emphasis on life skills, with subjects such as:

- Stress management
- Getting along in groups
- Communication
- Cultural literacy
- Philosophy of life
- Health
- Math as needed
- Life decisions
- Business skills
- Daily physics (how things work)

"When learning isn't fun, it's not learning.... What's fun is doing."

Material for this article was gathered from Roger Schank's presentation at the CEFPI conference in Columbus, Ohio, April, 1999, as well as Schank's book "Virtual Learning."

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